



May 5, 1992

In Reply
Refer To: HW-113

Robert L. Geddes
Senior Environmental Engineer
Monsanto Chemical Company
P.O. Box 816
Soda Springs, ID 83276

Subject: Proposed Changes to Sampling Plans in the Remedial
Investigation/Feasibility Study Work Plan for the Soda
Springs Elemental Phosphorus Plant

Dear Mr. Geddes:

The purpose of this letter is to respond to changes in the RI/FS work plan for the Monsanto Company Superfund Site in Soda Springs which Monsanto and its contractor have proposed, to notify you of EPA's plans for oversight sampling during the week of May 11, 1992, and to transmit draft exposure scenarios for the human health risk assessment.

On April 15, 1992, EPA received a letter dated April 9, 1992 from Mr. David Banton of Golder Associates, Inc., to Monsanto which outlined proposed changes to the RI/FS Work plan. EPA has reviewed the proposed changes and discussed them directly with Mr. Banton on April 29, 1992, in your absence. Mr. Banton answered EPA's questions and provided the rationale for the proposed changes. Based on that discussion and EPA's review of the preliminary supporting data, most of the proposed changes are acceptable to EPA.

EPA accepts the proposed changes to the RI/FS outline as proposed in the letter from Golder Associates to Monsanto dated April 9, 1992, with the following exception:

The biannual sampling for the target list metals should remain intact. At a minimum, the constituents to be analyzed must include aluminum and beryllium since concentrations of these chemicals exceeded risk-based levels and have varied seasonally.

As a follow up, Monsanto should provide EPA with a brief written version of the rationale for the changes and references to the supporting data, by May 21, 1992. In the future, Monsanto

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should provide the supporting rationale along with any proposed changes to facilitate EPA's review.

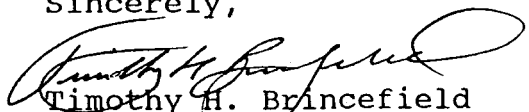
EPA's oversight team during this sampling effort will consist of the SAIC field representative (Ms. Paige Embry) and another SAIC employee, plus Mr. Don Matheny of EPA's Quality Assurance Office and possibly Mr. Gordon Brown of the Idaho Department of Health and Welfare. Mr. Matheny will share oversight responsibility with the SAIC employees, who will also have primary responsibility for split sampling. Mr. Brown, if he is able to attend, will be there as an observer and to assist the rest of the team with oversight. If there are questions about the oversight program that cannot be resolved in the field, Mr. Jim Eldridge of SAIC and I will be available by phone in Seattle.

The sites chosen for split sampling include the following: TW-10, TW-12, TW-20, TW-22, TW-36, TW-37, the Harris Well, Mormon Spring, and Southwest Spring. Analysis will be conducted for metals and fluorides. These locations have been selected to obtain biannual data and to focus on sites that had elevated concentrations of metals or anions when sampled in October, 1991.

Finally, attached for your consideration is a draft of the proposed exposure scenarios which SAIC has recommended to EPA for the human health risk assessment at the Monsanto site, and data needs to help develop these scenarios. I would be interested in any comments or concerns you may have regarding this document. Any such concerns will help guide our evaluation of data needs for phase 2 of the RI/FS. EPA will be giving these scenarios and the risk assessment greater attention after we have reviewed the site characterization report.

If you have any questions about these matters or would like to discuss them, please call me at (206) 553-2100.

Sincerely,


Timothy H. Brincefield
Superfund Project Manager

Enclosure

cc: Charles Ordine, EPA ORC
Christine Psyk, EPA Superfund
Lorraine Edmond, EPA ESD
Don Matheny, EPA ESD
Gordon Brown, IDHW
Mike Thomas, IDHW
Jim Eldridge, SAIC
David Banton, Golder Associates

SAIC
Science Applications International Corporation
An Employee-Owned Company
Technology Services Company

March 25, 1992

DCN: TZ4-C10019-EP-09972

Mr. Tim Brincefield
U.S. EPA Region 10
1200 Sixth Avenue (HW-113)
Seattle, WA 98101

Subject: EPA Contract 68-W9-0008, W.A. C10019
Monsanto RI/FS Oversight
Proposed Exposure Scenarios - Draft

Dear Mr. Brincefield:

The following is a draft of the proposed exposure scenarios recommended for the Monsanto site at Soda Springs and data needs to help develop these scenarios. The development of exposure scenarios as an early step in the human health baseline risk assessment follows U.S. EPA guidance provided in Risk Assessment Guidance for Superfund (RAGS). Information contained herein were basically derived from Dr. Gary Pascoe, of Environmental Toxicology, Inc., on similar work performed for the adjacent Kerr-McGee facility.

Exposure Scenarios

The following exposure scenarios are proposed for the baseline risk assessment for the Monsanto site under both current and possible future conditions. For the future scenarios outlined below, the baseline risk assessment assumes no remedial changes in contaminant sources. Final exposure pathways will be determined from the current investigations and development of the site conceptual model.

For the current exposure scenarios, values for the exposure parameters will be based on site-specific information where available. For the future scenarios, values will include a reasonable maximum exposure scenario, as per Superfund guidance. Development of the exposure scenarios described below is anticipated to provide a reasonable range of potential risks at the site by inclusion of both reasonable current exposures and higher levels for potential future exposures.

Current Exposures

Onsite Industrial - Exposures will be evaluated for those workers and site visitors currently exposed to onsite contaminants. Exposure routes will include ingestion of contaminated soils and inhalation of contaminated dusts. Dermal exposures may be evaluated qualitatively. Exposures will be evaluated only for those areas of the site independent of daily production activities.

Active areas of the facility in and around the production buildings are assumed to be adequately monitored for exposures to onsite workers under OSHA and will not be evaluated for chronic health risks. A proposed approach for developing on-site specific exposure parameters for this scenario is discussed below.

Offsite Agricultural - An agricultural exposure scenario will be developed as per U.S. EPA guidance for the current agricultural areas around the site. Since the area around the site is farmed and grazed by horses, routes of exposure to humans will consist of ingestion of contaminated crops. Crop exposures would result from uptake of contaminants from soils that migrated via windblown dust. Most of the crops in the area consist of grains used as livestock feed or blended with other grains in flours. Currently, the fields may be harvested every other year. The fields north of the site are on a 10-year set aside program in native grass programs and hence removed from this scenario.

Offsite Residential - Currently, there are residences south of the Monsanto site that could be potentially exposed to contamination. This scenario will be evaluated under current operations of the facility with air transport of stack emissions. Routes of exposures would include consumption of groundwater as drinking water, inhalation of contaminated fugitive dusts and windblown offsite soils, and consumption of offsite contaminated soils resulting from fugitive dust deposition. Dermal exposures may also be evaluated qualitatively.

Future Exposures

An assessment of possible future exposures at the site is included in the baseline risk assessment. These exposures represent hypothetical conditions at the site that may provide useful information to U.S. EPA managers in evaluating future controls of contaminant releases at the site should conditions there change with time. Since it is difficult to predict reasonable maximum exposures for future conditions at the site, standard default values for exposure parameters generally will be used in these scenarios.

Development of the future exposure scenarios is dependent on contaminant concentrations predicted in select media at or near the downgradient boundaries of the site. As such, the scenarios may depend on results of any modeling of migration of contaminated groundwater or fugitive dusts from the site.

Onsite Industrial - A future exposure scenario will assume that workers spend all of their working hours at contaminated areas of the site. Hypothetically, this might be the case should a new operation be located at an unremediated contaminant source area requiring continuous worker presence. In this scenario, workers may be exposed equally to the different contaminant sources, or continually to a single major source or area of the site.

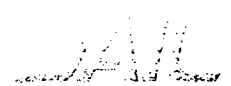
Exposure routes would be similar to those for the current industrial scenario, and would also include occasional consumption of contaminated groundwater as a drinking water source. Because of the uncertainty in the possible future exposures, values for the exposure parameters will be based on Region X default values for the industrial scenario.

Offsite residential - The current residential and agricultural areas south of the Monsanto site will be assumed to expand up to the site boundaries. The hypothetical resident will be located at an area of maximum potential exposure. This scenario will be evaluated for two conditions: 1) under current operations of the facility with air transport of stack emissions, and 2) under an assumption that the facility is no longer operating and stack emissions are not a source of air contaminants.

The routes of exposures would include consumption of contaminated offsite groundwater at or near the site boundary, inhalation of contaminated fugitive dusts and windblown offsite soils, and consumption of offsite contaminated soils resulting from fugitive dust deposition. Dermal exposures may be evaluated qualitatively. This scenario may also account for future changes in groundwater contaminant concentrations through time in the absence of remediation, should such information be available. Values for exposure parameters will be those recommended by EPA Region X guidance.

Additional exposure route - Although EPA Region X assumes a low likelihood for future residential exposures from drinking onsite groundwater, the agency is interested in the possible health risks from that route of exposure. Therefore, a hypothetical exposure will be assumed for an adult consuming 2 liters/day of contaminated onsite groundwater for 30 years, using upper-bound values for contaminated groundwater.

T. Brincefield
March 25, 1992
page 4 of 4


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Data Needs for Development of Worker Exposure Scenario

To evaluate exposures of onsite workers at an active facility to site-related contaminants, a number of exposure parameters need to be developed that are specific to the working situation at the facility. Values for such site-specific exposure parameters will be used to assess exposures to onsite workers in lieu of using EPA standard default parameter values. The scenario could also evaluate potential exposures to visitors to the site.

Site-specific exposure parameters for which data are needed include:

- Identification of contaminated areas at the site - can be found in the site work plan
- Frequency of worker visits to contaminated areas
- Duration of worker visits to contaminated areas
- Frequency and duration of visitors to contaminated areas of the site

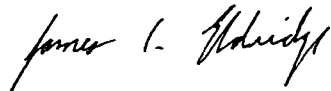
Estimation of frequency and duration of worker visits to contaminated areas should be based on estimates of current plant management and onsite workers. The low and high ends of the range estimated could be used to estimate average and upper-bound exposures, respectively. Monsanto should supply U.S. EPA Region X with best estimates of current frequency and duration of worker exposures to contaminated areas of the site. Additional information on estimates of such exposures parameters as soil intake rates may also be provided. The OSHA office in Idaho may be contacted for verification of site-specific information on potential worker exposure to contaminated areas.

These human health exposure scenarios are consistent with those proposed for the neighboring Kerr-McGee facility.

Should you have any questions, please contact me.

Sincerely,

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION
Technology Services Company



James C. Eldridge
Environmental Scientist
Work Assignment Manager

cc: P. Rubenstein, EPA RPO
T. Tobin, SAIC/TSC RPM